

**SOLUTION-BASED METHODS FOR DETECTING
MHC-BINDING PEPTIDES**

ABSTRACT OF THE INVENTION

Solution-based methods for identifying an MHC-binding peptide or measuring affinity of MHC-binding peptides for an MHC monomer, or modified MHC monomer by incubating at least one MHC monomer or modified MHC monomer having a bound template MHC-binding peptide, an excess amount of a competitor peptide, and a tracer MHC-binding peptide tagged with a detectable label so as to allow competition binding between the three peptides. At least a portion of the competitor peptide exchanges with the template peptide and a difference in signal produced by the detectable label in the total sample as compared with signal produced solely by monomers after the competition assay is obtained and used to calculate affinity of the competitor peptide for the monomer. These methods are useful in peptide discovery programs and exchanged monomers can be further tested for activity in tetramer cell staining assays.